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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/718,845	11/21/2003	Mark Christopher Tonkin	AD6551 US DIV 2	1469

23906 7590 02/23/2005

E I DU PONT DE NEMOURS AND COMPANY  
LEGAL PATENT RECORDS CENTER  
BARLEY MILL PLAZA 25/1128  
4417 LANCASTER PIKE  
WILMINGTON, DE 19805

EXAMINER

FORTUNA, ANA M

ART UNIT PAPER NUMBER

1723

DATE MAILED: 02/23/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/718,845

Applicant(s)

TONKIN ET AL.

Examiner

Ana M Fortuna

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE \_\_\_\_ MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 03 December 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 30-89 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 80-89 is/are allowed.
- 6) ☐ Claim(s) 30-31, 35, 37-47, 49, -56, 58, 62-64, 68, 71-79 is/are rejected.
- 7) ☒ Claim(s) 32-34, 36, 48, 49, 57, 59-61, 65-67, 69-70 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_

***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 30, 35, 37, 40, 43, 46, 47, 50, 51, 53, 54, 63, 71, 74, 75, 76, 77 are rejected under 35 U.S.C. 102(b) as being anticipated by Paterson et al (4,805,343)(hereinafter '343). Reference '343 discloses the moisture controlled growing medium including the hollow hydrophilic membrane, the membrane provided within the growing medium and covered by the growing medium or soil (Fig. 5, column lines 27-66), abstract). As to claims 35, 37 introducing water containing solids into the membrane and retaining solids is disclosed in '343 (column 2, lines 10-42) , maintaining and controlling a moisture content in the growing medium is also disclosed (column 3, lines 21-33). As to claim 40-41, covering the membrane with the growing medium and adjacent to the root zone is disclosed in '353, and discussed above (Fig. 5).

Regarding claim 42, as discussed above the membrane is a pipe or hollow fiber.

The process of providing moisture, e.g. permeate water through the membrane is also disclosed in the reference above, as claimed in claim 46 of the present invention. The limitation of claims 50-51, 53, 54, are discussed above.

The limitations of claims 63, 68, 71, 74, 75, 76, and 77 are disclosed in the sections or reference '343 discussed above.

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 31, 38, 39, 45, 44, 55, 58, 62, 64, 68, 73, 78, 79 are rejected under 35 U.S.C. 103(a) as being unpatentable over by Paterson et al (4,805,343)(hereinafter '343). Reference '343 fails to disclose a copolymer of polyvinyl alcohol as material for the membrane. '343 discloses PVA, Nylon, polycarbonate or a material, and in general teaches material that can hydrolyzed to produce a hydrophilic membrane. (column 8, second paragraph). It would have been obvious to one skilled in the art at the time the invention was made to select a copolymer of PVA as a hydrophilic membrane, since the membrane material is not limited, copolymers of PVA are highly hydrophilic. Regarding to the supported membrane, reference '343 teaches that the membrane as being thick enough to perform its function (column 4, lines 29-39. '343 do not disclose the support. It would have been obvious to one skilled in the art at the time the invention was made to reinforce the membrane, e.g. to increase thickness and membrane strength, so that in operation the membrane can stand to be placed under a certain volume of growing medium. Providing a screen for protecting the membrane, as the support material, not affecting the permeation of the membrane, it would have been also obvious at the time the invention was made.

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Regarding claims directed to the growing medium, reference '343 discloses soil, however, sand, clay, etc, are well known plant growing medium. It would have been obvious to one skilled in the art at the time the invention was made to perform the process including providing a permeating liquid through a hydrophilic membrane to any other plant medium, since the membrane performance is not affected by the particular medium, and the medium does not seem to be critical to the invention.

Regarding to the moisture content gradient, a gradient equal to zero indicate that water is not permeating back to the osmotic membrane, and therefore, the medium requires more water, which inherently happens with the membrane of '343.

***Allowable Subject Matter***

5. Claims 80-89 allowed..

6. Claims 32-34, 36, 48, 49, 57, 59-61, 65-67, 69-70, are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

7. The following is an examiner's statement of reasons for allowance: allowability is based on the membrane used, including hydrophilic vapor permeable membranes, and the membrane with the vapor transfer as claimed in the indicated allowed claims, such limitations are not disclosed or suggested by the prior art of record..

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably

accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

***Response to Arguments***

8. Applicant's arguments with respect to claims rejected in prior office action have been considered but are moot in view of the new ground(s) of rejection. A new reference is considered pertinent to some of the claims as discussed in the rejection above.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ana M Fortuna whose telephone number is (571) 272-1141. The examiner can normally be reached on 9:30-6:00 M-F.

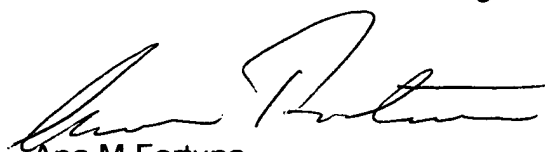
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wanda L. Walker can be reached on (571) 272-1151. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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A handwritten signature in black ink, appearing to read 'Ana M Fortuna', written in a cursive style.

Ana M Fortuna  
Primary Examiner  
Art Unit 1723

AF

February 18, 2002